

CLAIMS

- 1. An authentication system comprising:**
a light emitting device having
display means for displaying an image in which authentication information is
incorporated, and
first optical system means for diffracting light of the displayed image at a
predetermined angle for each pixel; and
an authentication device having
second optical system means for collecting the light of the image diffracted by the
light emitting device,
photoelectric converting means which carries out photoelectric conversion of the
collected image, and
control means which carries out authentication using the converted image.
- 2. The authentication system according to claim 1, wherein the display means and**
the first optical system means are arranged so that in an image which is displayed by the
display means, the image corresponding to the authentication information is diffracted
and image other than the authentication information is emitted in a direction substantially
perpendicular to a display screen of the display means.
- 3. The authentication system according to claim 1, wherein the image is displayed**
from the light emitting device in accordance with to an inquiry signal from the
authentication device.
- 4. The authentication system according to claim 1, wherein the first optical system**
means and the second optical system means are lens arrays which utilize a one
dimensional light distribution.

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5. The authentication system according to claim 1, wherein the first optical system means and the second optical system means are lens arrays which utilize a two dimensional light distribution.

6. The authentication system according to claim 1, wherein the image is a hologram pattern.

7. The authentication system according to claim 1, wherein the image is a graphic pattern which does not exhibit hologram effect.

8. The authentication system according to claim 1, wherein the first optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses.

9. A light emitting device comprising:

display means for displaying an image in which authentication information is incorporated; and

optical system means for diffracting light of the displayed image at a predetermined angle for each pixel.

10. The light emitting device according to claim 9, wherein the display means and the optical system means are arranged so that in the image which is displayed by the display means, the image corresponding to the authentication information is diffracted and the image other than authentication information is emitted in a direction substantially perpendicular to a display screen of the display means.

11. The light emitting device according to claim 9, wherein the image is displayed

from the display means in accordance with an inquiry signal from an outside device.

12. The light emitting device according to claim 9, wherein the optical system means is a lens array which utilizes one dimensional light distribution.

13. The light emitting device according to claim 9, wherein the optical system means is a lens array which utilizes two dimensional light distribution.

14. The light emitting device according to claim 9, wherein the image is a hologram pattern.

15. The light emitting device according to claim 9, wherein the image is a graphic pattern which does not exhibit hologram effect.

16. The light emitting device according to claim 9, wherein the optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses.

17. An authentication device comprising:
optical system means for collecting light of an image scattered at a predetermined angle by an outside device;
photoelectric converting means which carries out photoelectric conversion of the collected image; and
control means which carries out authentication using the converted image.

18. The authentication device according to claim 17, wherein an image corresponding to authentication information in the image is diffracted and an image other than the authentication information is not diffracted.

19. The authentication device according to claim 17, wherein an inquiry is made for requesting the outside device to output the image.
20. The authentication device according to claim 17, wherein the optical system means is a lens array which utilizes a one dimensional light distribution.
21. The authentication device according to claim 17, wherein the optical system means is a lens array which utilizes a two dimensional light distribution.
22. The authentication device according to claim 17, wherein the image is a hologram pattern.
23. The authentication device according to claim 17, wherein the image is a graphic pattern which does not exhibit hologram effect.
24. The authentication device according to claim 17, wherein the outside device has an optical system means for diffracting light, said optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses.
25. An authentication method comprising the steps of:
displaying, from display means, an image in which authentication information is incorporated,
diffracting light of the displayed image at a predetermined angle for each pixel by first optical system means,
collecting, by second optical system means, light of the image diffracted by the first optical system means,
carrying out photoelectric conversion of the collected image by photoelectric converting means, and

carries out authentication by control means using the converted image.

26. The authentication method according to claim 25, wherein the display means and the first optical system means are arranged so that in the image which is displayed by the display means, the image corresponding to the authentication information is diffracted and the image other than authentication information is emitted in a direction substantially perpendicular to a display screen of the display means.

27. The authentication method according to claim 25, wherein the image is displayed from the display means in response to an inquiry.

28. The authentication method according to claim 25, wherein the first optical system means and the second optical system means are lens arrays which utilize a one dimensional light distribution.

29. The authentication method according to claim 25, wherein the first optical system means and the second optical system means are lens arrays which utilize a two dimensional light distribution.

30. The authentication method according to claim 25, wherein the image is a hologram pattern.

31. The authentication method according to claim 25, wherein the image is a graphic pattern which does not exhibit a hologram effect.

32. The authentication method according to claim 25, wherein the first optical system means is a lens array comprising a plurality of lenses, and gaps are provided between the lenses.